

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

**Tiedtke-Bühling-Kinne &
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25. Okt. 2004

TBK - PATENT

**NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY**
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year)

19-10-2004

Applicant's or agent's file reference

W0 33664

IMPORTANT NOTIFICATION

International application No.

PCT/IB2002/002842

International filing date (day/month/year)

19-07-2002

Priority date (day/month/year)

Applicant

**Nokia Corporation
et al**

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see Also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WO33664	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/IB 2002/002842	International filing date (<i>day/month/year</i>) 19.07.2002	Priority date (<i>day/month/year</i>)
International Patent Classification (IPC) or national classification and IPC H04L 29/06, H04L 12/56		
Applicant Nokia Corporation et al		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <div style="margin-left: 20px;"> <div style="margin-bottom: 10px;"> <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <div style="margin-left: 20px;"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> </div> <div> <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). </div> </div>
4.	This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>

Date of submission of the demand 18.02.2004	Date of completion of this report 18.10.2004
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Kristoffer Ogebjer/EK Telephone No. +46 8 782 25 00

Form PCT/IPEA/409 (cover sheet) (January 2004)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/IB 2002/002842

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the drawings:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/IB 2002/002842

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-20</u>	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	<u>1-20</u>	NO
Industrial applicability (IA)	Claims	<u>1-20</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Cited documents in the International search report:

D1: VADALI R ET AL: "Agent-based route optimization for mobile IP VTC FALL 2001. IEEE 54TH. VEHICULAR TECHNOLOGY CONFERENCE. PROCEEDINGS. ATLANTIC CITY, NJ, OCT. 7 - 11, 2001, IEEE VEHICULAR TECHNOLOGY CONFERENCE, NEW YORK, NY: IEEE, US, vol. 1 OF 4. CONF. 54, 7 October 2001 (2001-10-07), pages 2731-2735, XP010562472 ISBN: 0-7803-7005-8;

D2: PERKINS, JOHNSON: "Route Optimization in Mobile IP: draft-ietf-mobileip-optim-11.txt" INTERNET DRAFTS, 6 September 2001 (2001-09-06), pages 1-25, XP002234531;

D3: MALKI, SOLIMAN: "Hierarchical Mobile IPv4/v6 and Fast Handoffs: draft-elmalki-soliman-hmipv4v6-00.txt" INTERNET DRAFTS, 10 March 2000 (2000-03-10), page 1-24 XP002234532;

D4: JOO, EDWARDS: "A Fast Reacting Mechanism for Terminal Mobility: draft-ehjoo-fr-rsvp-00.txt" INTERNET DRAFTS, 2 November 2001 (2001-11-02), pages 1-18, XP002234533

The object of the invention is to solve the triangle routing problem while maintaining optimised mobility and location privacy at the same time.

D1, which is considered to be the closest state of the art, relates to a method solving the triangle routing problem. The tasks of maintaining and updating binding caches and encapsulating messages are moved away from individual correspondent nodes to the correspondent agents. D1 introduces a correspondent agent, which makes it possible to tunnel the

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

data to the mobile node and D1 explicit states the feature of bypassing the mobile node's home agent and establishes a tunnel to the node.

The invention differs from what D1 discloses in the matter of naming the different parts. These parts are performing operations in accordance to the parts of D1. By referring the details of D1 to the wording of claim 1 this will be more apparent:

According to the method of D1 a route is established from the source (CN) via on first agent (CA) associated to the source, at least two agents (FA and HA) associated to the destination to the destination. The route is to be optimised and when rerouted the HA is bypassed. From what the invention states according to claims 1 and 11 the invention is considered to be an obvious method/system for a person skilled in the art that requires no extra inventive activity by the skilled person from what D1 discloses. Hence, the invention according to claims 1 and 11 lacks an inventive step.

The binding update in D1 may be initiated by the foreign agent in the system or the mobile node. Therefore, the invention according to claims 2,3,12 and 13 is considered to be an obvious feature to a person skilled in the art and lacks an inventive step.

To send the route optimisation in the resource reservation signalling does not require extra inventive activity by the skilled person and thereby lacks the invention according to claims 10 and 20 an inventive step.

To base the decision on the service or the quality of service required does not require extra inventive activity by the person skilled in the art to implement in the system of D1. Therefore, the invention according to claims 4-6 and 14-16 lacks an inventive step.

D1 discloses the feature of informing the first agent of the care_of_address of the destination and hence, the invention according to claims 8,9 and 18,19 lacks an inventive step.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

Neither is the ability to base the routing on the estimated benefit in form of a threshold value considered to involve an inventive step. Hence, the invention according to claims 7 and 17 lacks an inventive step. Bypassing the mobile's home agent is also known from D2 (chapter 1 and 3) and D3 (chapter 7,8). D2 also discloses the route optimization that provides means for any node to maintain a binding cache containing the care-of address of one or more mobile nodes. When sending an IP datagram to a mobile node, if the sender has a binding cache entry for the destination mobile node, it MAY tunnel the datagram directly to the care-of address indicated in the cached mobility binding.

Accordingly, the invention defined in claims 1-20 is novel but is considered to lack an inventive step. The invention is industrially applicable.